

OHS01170

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL INFORMATION SYSTEMS, INC.
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EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: AMMONIUM CHLORIDE

TRADE NAMES/SYNONYMS:

AMMONIUM MURIATE; SAL AMMONIA; SALAMMONITE; SALMIAC; SAL AMMONIAC; AMMONIUM
CHLORIDE (NH₄Cl); AMMONIUM CHLORIDE ((NH₄)Cl); ClH₄N; OHS01170; RTECS
BP4550000

CHEMICAL FAMILY: inorganic, salt

CREATION DATE: Nov 28 1984

REVISION DATE: Sep 18 2001

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: AMMONIUM CHLORIDE
CAS NUMBER: 12125-02-9
EC NUMBER (EINECS): 235-186-4
EC INDEX NUMBER: 017-014-00-8
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

CHANGE IN APPEARANCE: hygroscopic

COLOR: colorless, white

PHYSICAL FORM: crystals, powder

ODOR: odorless

MAJOR HEALTH HAZARDS: respiratory tract irritation, eye irritation

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
EYE CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
INGESTION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting
LONG TERM EXPOSURE: nausea, vomiting, bone disorders, coma
CARCINOGEN STATUS:
OSHA: No
NTP: No
IARC: No

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.
SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.
EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
INGESTION: If a large amount is swallowed, get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.
EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam
Large fires: Use regular foam or flood with fine water spray.
FIRE FIGHTING: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water.

WATER RELEASE:

Neutralize.

OCCUPATIONAL RELEASE:

Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

SECTION 7 HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store in a cool, dry place. Keep separated from incompatible substances. Store in a cool, dry place. Store in a tightly closed container. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

AMMONIUM CHLORIDE:

- 10 mg/m3 OSHA TWA (particulate) (vacated by 58 FR 35338, June 30, 1993)
- 20 mg/m3 OSHA STEL (particulate) (vacated by 58 FR 35338, June 30, 1993)
- 10 mg/m3 ACGIH TWA (fume)
- 20 mg/m3 ACGIH STEL (fume)
- 10 mg/m3 NIOSH recommended TWA 10 hour(s) (fume)
- 20 mg/m3 NIOSH recommended STEL (fume)
- 10 mg/m3 UK OES TWA (fume)
- 20 mg/m3 UK OES STEL (fume)

MEASUREMENT METHOD: Particulate filter; Water; Ion chromatography; OSHA # ID188

VENTILATION: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Protective gloves are not required, but recommended.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any dust, mist, and fume respirator.

Any air-purifying respirator with a high-efficiency particulate filter.

Any powered, air-purifying respirator with a dust, mist, and fume filter.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid

COLOR: colorless, white

CHANGE IN APPEARANCE: hygroscopic

PHYSICAL FORM: crystals, powder

ODOR: odorless

TASTE: cool taste

MOLECULAR WEIGHT: 53.50

MOLECULAR FORMULA: N-H4-Cl

BOILING POINT: Not applicable

MELTING POINT: Not available

SUBLIMATION POINT: 644 F (340 C)

VAPOR PRESSURE: 1 mmHg @ 160 C

VAPOR DENSITY (air=1): 1.9

SPECIFIC GRAVITY (water=1): 1.5

WATER SOLUBILITY: 28.3% @ 25 C

PH: 5.0 @ 25 C (10% solution)

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: methanol, ethanol, glycerol, liquid ammonia

Practically Insoluble: ether, acetone, ethyl acetate

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition.
Avoid contact with incompatible materials.

INCOMPATIBILITIES: acids, bases, oxidizing materials, halogens, metals,
cyanides, metal salts

AMMONIUM CHLORIDE:

ACIDS (STRONG): Evolves corrosive hydrogen chloride gas.

ALKALIS AND THEIR CARBONATES: Incompatible.

AMMONIUM NITRATE: Violent decomposition.

BASES (STRONG): Evolves corrosive ammonia gas.

BROMINE PENTAFLUORIDE: Violent reaction with ignition.

BROMINE TRIFLUORIDE: May cause explosion.

COPPER AND ITS COMPOUNDS: May be attacked.

HYDROGEN CYANIDE: Formation of explosive nitrogen trichloride.

IODINE HEPTAFLUORIDE: Violent reaction.

LEAD SALTS: Incompatible.

METALS: May be corroded in the presence of moisture.

POTASSIUM CHLORATE: Violent reaction or explosion.

SILVER SALTS: Formation of explosive silver compounds.

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: ammonia, halogenated compounds, oxides of
nitrogen

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

AMMONIUM CHLORIDE:

IRRITATION DATA:

500 mg/24 hour(s) eyes-rabbit mild; 100 mg eyes-rabbit severe

TOXICITY DATA:

2 gm/kg oral-infant LDLo; 1650 mg/kg oral-rat LD50; 30 mg/kg

intramuscular-rat LD50; 550 mg/kg unreported-rat LD50; 1300 mg/kg oral-mouse

LD50; 485 mg/kg intraperitoneal-mouse LD50; 500 mg/kg subcutaneous-mouse

LDLo; 358 mg/kg intravenous-mouse LD50; 600 mg/kg oral-dog LDLo; 1 gm/kg oral-rabbit LDLo; 200 mg/kg subcutaneous-rabbit LDLo; 78 mg/kg intravenous-rabbit LDLo; 72 mg/kg subcutaneous-guinea pig LDLo; 220 mg/kg intravenous-guinea pig LDLo; 1500 mg/kg oral-domestic animal LDLo; 51660 mg/kg/10 week(s) continuous oral-rat TDLo

LOCAL EFFECTS:

Irritant: inhalation, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: kidney disorders

MUTAGENIC DATA:

cytogenetic analysis - hamster fibroblast 400 mg/L

ADDITIONAL DATA: Interactions with drugs may occur.

HEALTH EFFECTS:

INHALATION:

ACUTE EXPOSURE:

AMMONIUM CHLORIDE: Inhalation of the dust may cause irritation with coughing, sore throat and difficult breathing. Laboratory animals exposed to 50 mg/m³ for 6 hours showed no signs of intoxication. However, post mortem examination showed congestion of the trachea and bronchial mucosa; the lungs were distended and emphysematous with petechial hemorrhaging and hyperemia. Changes were evident in the liver, spleen and adrenal medulla.

CHRONIC EXPOSURE:

AMMONIUM CHLORIDE: No data available.

SKIN CONTACT:

ACUTE EXPOSURE:

AMMONIUM CHLORIDE: May cause irritation.

CHRONIC EXPOSURE:

AMMONIUM CHLORIDE: Repeated or prolonged contact may cause dermatitis.

EYE CONTACT:

ACUTE EXPOSURE:

AMMONIUM CHLORIDE: May cause irritation with redness and pain. Solutions less than 10% are generally well tolerated by the eye.

CHRONIC EXPOSURE:

AMMONIUM CHLORIDE: Repeated or prolonged contact may cause conjunctivitis.

INGESTION:

ACUTE EXPOSURE:

AMMONIUM CHLORIDE: May cause irritation of mouth and stomach with nausea or vomiting. Large doses may cause diuresis, systemic acidosis and ammonia poisoning.

CHRONIC EXPOSURE:

AMMONIUM CHLORIDE: Repeated ingestion may cause nausea, vomiting, acidosis, hypoproteinemia, demineralization of boney structures, and coma. Rabbits with damaged livers, and adrenals removed, were fed ammonium chloride for 120 days, resulting in permanent changes in the electroretinogram and degeneration of the ganglion cell layer of the retina.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 640 ug/L 96 hour(s) LC50 (Mortality) Hybrid striped bass
(*Morone saxatilis* x *chrysops*)

INVERTEBRATE TOXICITY: 38000 ug/L 96 hour(s) LC50 (Immobilization) Ark shell
(*Anadara granosa*)

ALGAL TOXICITY: 70000 ug/L 1 hour(s) (Photosynthesis) Blue-green algae
(*Plectonema boryanum*)

PHYTOTOXICITY: 7160 ug/L 120 hour(s) EC50 (Growth) Duckweed (*Lemna minor*)

OTHER TOXICITY: 210 ug/L 21 hour(s) NOEC (Growth) Leopard frog (*Rana pipiens*)

ENVIRONMENTAL SUMMARY: Highly toxic to aquatic life.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No classification assigned.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: No classification assigned.

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

AMMONIUM CHLORIDE: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
Not regulated.SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

EUROPEAN REGULATIONS:

EC CLASSIFICATION (ASSIGNED):

Xn Harmful

Xi Irritant

EC Classification may be inconsistent with independently-researched data.

DANGER/HAZARD SYMBOL:

Xn Harmful

EC RISK AND SAFETY PHRASES:

R 22 Harmful if swallowed.

R 36 Irritating to eyes.

S 2 Keep out of reach of children.

S 22 Do not breathe dust.

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GERMAN REGULATIONS:

WATER HAZARD CLASS (WGK):

STATE OF CLASSIFICATION: VwVwS

CLASSIFICATION UNDER HAZARD TO WATER: 1

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

SECTION 16 OTHER INFORMATION

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